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ABSTRACT

The standard is used to grade nonsupervisory jobs that involve examining services, materials, and products that are processed, manufactured, or repaired by workers performing trade or craft work to determine that the physical and operating characteristics are within acceptable standards, specifications, or contractual requirements. The occupational code of an inspector is the same as the code for the occupation of the kind of work that is inspected. The standard is divided into Part 1, the evaluation system, and Part 2, examples of job descriptions. Part 1 provides guidance on the use of three factors (situation, responsibility, and skill and knowledge) and grade determination charts to convert the factors into grades. Part 2 provides additional guidance by presenting several example job descriptions that are correctly graded through the application of the three factors outlined in Part 1. (Author/AJ)

JOB GRADING STANDARD FOR
INSPECTORS

ED 094201

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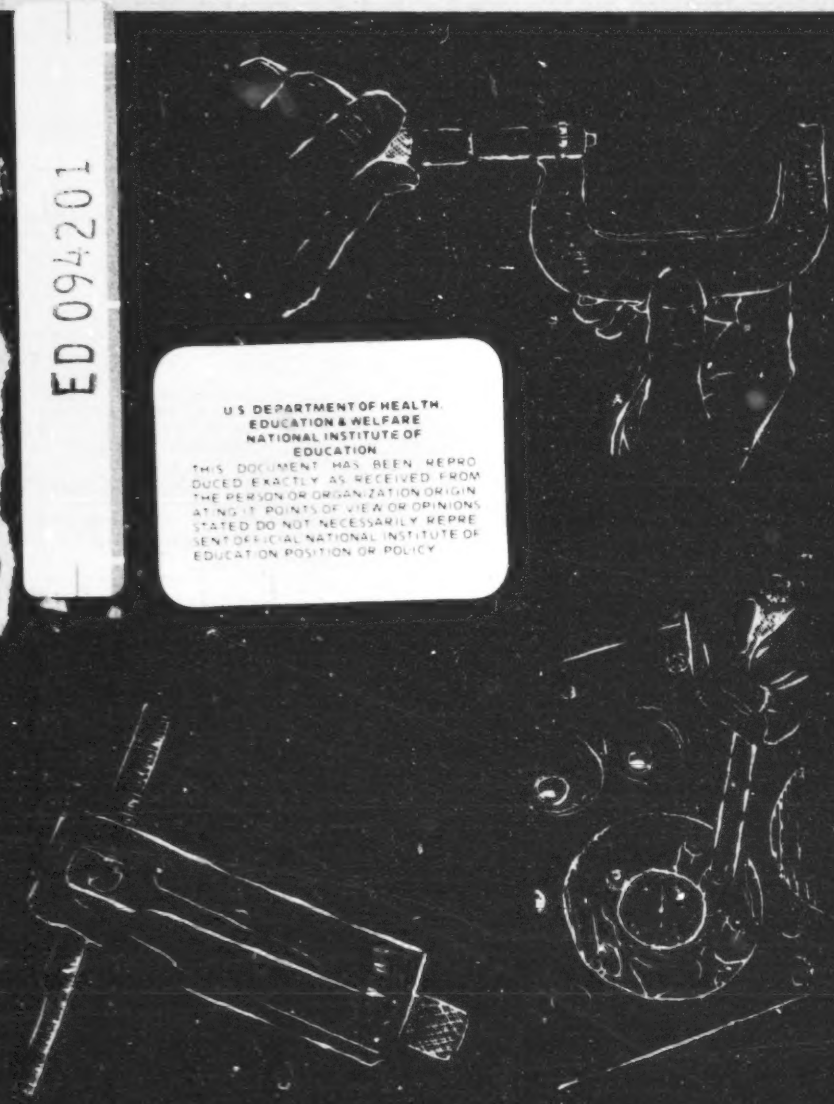

U.S. CIVIL SERVICE COMMISSION
BUREAU OF POLICIES AND STANDARDS

INSPECTORS

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September 1973

INSPECTORS

COVERAGE OF STANDARD

This standard is used to grade nonsupervisory jobs that involve examining services, materials, and products that are processed, manufactured, or repaired by workers performing trade or craft work to determine that the physical and operating characteristics are within acceptable standards, specifications, or contractual requirements.

WORK NOT COVERED BY THIS STANDARD

This standard should not be used for:

—Specialized technical work primarily concerned with the inspection of goods and services for acceptability of materials or processes and *not* involving, as a paramount requirement, the application of trade, craft, or laboring skills and knowledges. (See Quality Inspection Series, GS–1960.)

—Administrative and technical work concerned with monitoring, controlling, and maintaining the quality and reliability of material, facilities, services, or processes with emphasis on preventing defects through statistical quality control and achieving conformance with established requirements during the economic production cycle. (See Quality Assurance Series, GS–1910.)

—The examination of equipment to determine its identity, operational characteristics, maintenance requirements, or serviceability. (See Equipment Specialist Series, GS–1670.)

—Inspection of construction, remodeling, or repair of facilities or the inspection of construction materials for contract compliance and *not* involving, as a paramount requirement, the application of trade, craft, or laboring skills and knowledges. (See Construction Control Series, GS–809.)

—Work that involves troubleshooting, final alinement, trouble analysis, and calibration of equipment and systems. (See job grading standard for appropriate occupation.)

—Examining units such as buildings and facilities, parts, items, assemblies, and systems to plan, estimate, and schedule the use of manpower, machines, and materials in manufacture, maintenance, or repair operations.

—Condition classifying and receiving inspecting, commodity inspecting (e.g., lumber grading), nondestructive testing (e.g., X-ray, magnetic particle, and dye-penetrant), and other examining work that does not require a comprehensive knowledge of the trade or craft work process involved in making or repairing the items.

CODES AND TITLES

The occupational code of an inspector job is the same as the code for the occupation of the kind of work that is inspected. Where work of more than one kind of work is inspected, the code for the inspector job is the same code as the highest level of work that is inspected. If no single occupation predominates, the 01 code of the predominant job family is appropriate.

The title of an inspector job is derived from the title of the kind of work inspected followed by the designator, Inspector.

In some cases, the use of the exact title of the occupation may result in an awkward or misleading title. For example, the title Carpenter Inspector implies that it is the carpenter who is inspected when it is actually the carpentry work that is inspected. The appropriate title for these kinds of inspector jobs, is derived from the nonsupervisory work that is inspected, such as Carpentry Inspector or Automotive Equipment Repair Inspector.

In other occupations the word "work" may be added to the title of the kind of work that is inspected followed by the designator, inspector (e.g., Custodial or Janitorial Work Inspector).

Another titling distinction may be made between inspection work involved in inspecting complete systems and inspection work on components and assemblies. For example, Electronic Integrated Systems Repair Inspector should be used instead of Electronic Repair Inspector where appropriate.

Because these titling instructions may result in some variance among agencies and installations, it is essential that the occupational code of the inspector job be the same as the code of the primary line of work that is inspected. For example, although the

traditional title of Piping Systems Repair Inspector is appropriate for this kind of inspection work, the proper occupational code is the same as the highest level of the kind of work inspected; in this case, WG–4204.

GRADING PLAN

This standard is divided into part I, the evaluation system; and part II, examples of job descriptions.

Part I provides guidance on the use of three factors and grade determination charts to convert the factors into grades. The three factors are:

Factor I—Situation
Factor II—Responsibility
Factor III—Skill and Knowledge

Factor I is divided into three parts: Situation A—jobs that are limited in terms of scope, complexity, and inspection processes and techniques; situation B—jobs of broader scope with more technically complicated inspection processes and techniques; and situation C—jobs that inspect work produced by highly skilled craftsmen or workers in two or more different trades, usually involving complete complex systems or highly complicated products.

Factor II is divided into three levels of responsibility: Level I—less than average; level II—average; and level III—above average.

Factor III is divided into three levels of skill and knowledge: Levels A through C are described separately for each of the situations in factor I.

Physical effort and working conditions of inspector jobs may affect the inspector jobs only if they differ significantly from these factors as described in the example job description or the job grading standard for the occupation that is most nearly related to the manufacturing, repair, or work process that is inspected.

Part II provides additional guidance by presenting several example job descriptions that are correctly graded through the application of the three factors outlined in part I. These jobs are typical descriptions of commonly found work in various agencies and are presented as work examples for grading guidance only. The examples do not in any way suggest or limit the authority of agencies to assign work or particular duties to positions.

Part I. The Evaluation System

FACTOR I. SITUATION

The first step is to determine which of the following situations is the most typical of the inspector job.

Situation A: Less complex inspection work with basic and simple products to inspect using a limited variety of inspection methods and techniques. Typical of this situation are jobs that have the following characteristics:

1. The product has a limited number of quality characteristics, manufacturing or treatment processes, or relatively few, uncomplicated, interrelated parts.
2. Guideline material is easily understood, fully adequate, and remains relatively constant.
3. Inspections are performed according to definitive specifications using visual or sensory determinations, or uncomplicated measuring equipment and instruments.

Examples of these inspector jobs include:

1. Janitorial work inspecting (see example job description No. 1).
2. Powder and explosives inspecting.
3. Packing and processing inspecting.
4. Preservation inspecting (see example job description No. 2).
5. Bearing inspecting (see example job description No. 3).

Situation B: More complex inspection work usually of manufactured or repaired products using a wide variety of inspection processes and techniques. Typical of this situation are jobs that have the following characteristics:

1. The product has a variety of quality characteristics, usually consists of components and assemblies, undergoes several steps in a manufacture or repair process, and has rigid specifications and close tolerances.

2. Guidance material is complicated, requires interpretation and application to various situations, sometimes involving general performance-type specfications that are not always fully applicable and may require modifications by the Inspector.

3. Inspections are performed by using a variety of standard precision instruments, gages, and methods. Judgmental decisions are used concerning the proximity to tolerances and the fit of interrelated dimensions or the use of specially designed testing methods.

Examples of these inspector jobs include:

1. Machine work inspecting.
2. Diesel engine repair work inspecting (see example job description No. 4).
3. Painting inspecting (see example job description No. 5).
4. Small arms repair inspecting (see example job description No. 6).
5. Automotive repair inspecting (see example job description No. 7).
6. Sheet metal repair inspecting (see example job description No. 8).

Situation C: Highly sophisticated and complex inspection work, usually of manufactured or repaired products, using not only a wide variety of inspection processes and techniques but many unique and specially designed precision instruments and gages. The skill to inspect requires indepth knowledge of several trades or knowledge of a highly skilled trade. Typical of this situation are jobs that have the following characteristics:

1. The product has a wide variety of quality characteristics, usually consists of a complete system or a variety of components and assemblies, undergoes many steps in a manufacture or repair process, and has highly critical tolerances.

2. Guidance material is highly complicated and must be frequently modified to fit the situation.

3. Inspections are performed by using a variety of precision instruments, gages, and methods. Many checks have to be accomplished at critical points in the manufacture or repair process. Judgmental decisions are used concerning the proximity to tolerances and the fit of interrelated dimensions and their eventual effect on the completed system. Various spe-

cially designed testing methods must be reviewed and judged appropriate as required.

Examples of these inspector jobs include:

1. Electronic-mechanical systems inspecting.
2. Computer systems inspecting.
3. Piping systems inspecting (see example job description No. 9).
4. Electronic systems inspecting (see example job description No. 10).

FACTOR II. RESPONSIBILITY

The next step is to determine the value of responsibility. This factor consists of three levels. The three levels of responsibility are presented as follows:

Level I: Commitment authorities are not found or are severely limited, usually to specific areas or on a prior approval basis. Instructions and guides are available, appropriate, and clearly applicable. The supervisor provides instructions covering the purpose of the work and any complications that can be anticipated. The supervisor reviews completed work to assure that specific objectives have been met and that results are consistent with instructions. The Inspector makes decisions concerning routine matters that are adequately treated by available and readily interpretable guideline material.

Level II: The supervisor provides general instructions which concern the broad objectives and expected results of the assignment, deadline requirements, reporting formats, and other similar administrative matters. The Inspector receives little technical assistance during the course of the assignment. Review of completed work is concentrated on adequacy and conformance with desired objectives. Instructions and guides are usually available but are complicated, require careful interpretation, and may involve modification in their application to specific work assignments.

Level III: After a brief outline of priorities, work sequences, and pertinent policy matters has been given, the employee independently performs the assignment usually at a worksite where a supervisor is not readily available (such as at a contractor's plant). Completed work is reviewed for adherence to inspection policy and to assure that broad program objectives have been achieved. The inspector makes decisions on a wide range of mat-

ters that may involve deviations or departures from past precedents and accepted practices or highly subjective judgments. Instructions and guides, when available, generally are not directly applicable.

FACTOR III. SKILL AND KNOWLEDGE

The next step is to determine the degree of skill and knowledge needed to inspect in relation to the complexity of the product inspected and the nature and variety of inspection techniques that are applied. Use this factor according to the situation previously selected in factor I.

SITUATION A

Inspection of uncomplicated items or work processes primarily by visual or sensory perception or by using basic measuring tools such as rules, scales, templates, go-no-go and preset gages.

Degree A: Simple, repetitive, routine inspection tasks or processes using a knowledge of prescribed procedures and routines.

Degree B: Relatively few standardized inspection tasks or processes with some choice in carrying out recurring assignments.

Degree C: Various standardized inspection tasks or processes requiring some analysis and judgment or selection of methods and procedures.

SITUATION B

Inspection of manufactured or repaired products that have a variety of interconnecting parts, components, and assemblies with a variety of quality characteristics, rigid specifications, and close tolerances, using standard measuring and testing instruments comparable to the type the trade worker uses to check his own work.

Degree A: Practical application of a variety of inspection techniques to examine standardized components with a few interconnecting parts that are manufactured or repaired to specified tolerances and standard specifications.

Degree B: Application of a variety of difficult techniques to examine complicated and interconnecting components such as engines, transmissions, carburetors, and ignition systems, and machinery that are manufactured or repaired to close tolerances

and rigid specifications, using standard inspection and measuring devices such as feeler gages, micrometers, circuit testers, dwell meters, and a variety of dial indicators.

Degree C: Application of a wide variety of complex inspection techniques to examine complete assemblies such as general purpose vehicles, ordnance and heavy artillery, aircraft and ship assemblies, and other mechanical equipment using special inspection and measuring devices such as chassis dynamometers, torque wrenches, surface finish analyzers, audiotube testers, oscilloscopes, calipers, and screw-pitch gages.

SITUATION C

Inspection of complete complex systems or highly complex components that are manufactured or repaired by highly skilled craftsmen. Inspections are performed by using a variety of standard and complex instruments and testing devices and highly sophisticated equipment that is difficult to set up, use, and measure to highly critical tolerances such as dual-trace oscilloscopes, Q-meters, shadow-graphs, sine plates and bars, and optical flats.

Degree A: Application of a wide variety of inspection techniques to examine components, assemblies, or systems that have been manufactured or repaired by using highly complex work processes such as the extension of the use of conventional machines, the use of nonconventional machine tools, or consist of standard systems such as radar, sonar, navigational aids, radio communications receivers and transmitters (single band, UHF and VHF), signal generators, spectrum analyzers, frequency meters, and electronic counters. Inspections performed require the use of special measuring and testing devices such as precision gage blocks, roll-thread snap gages, concentricity gages, optical flats, supermicrometers, sine plates and bars, spectrum and distortion analyzers, digital meters, and voltage standing wave indicators.

Degree B: Application of a wide variety of inspection techniques to examine assemblies and systems that have been manufactured or repaired by the most highly skilled craftsmen, trades workers in several discrete trades, or a group of workers concerned with a complex system with numerous, complex, and interrelated assemblies such as ships' mechanical and piping systems.

Degree C: Application of a wide variety of highly sophisticated inspection techniques to inspect specialized work such as die sinking or patternmaking, the manufacture of complex and unique models or instruments, or the most complex aircraft, shipboard, or laboratory systems that have been repaired or modified according to the most critical design requirements and specifications.

Grade Determination Charts

After determining the proper *situation*, levels of *responsibility*, and degrees of *skill and knowledge*, use the grade determination charts to arrive at the appropriate grade level for the job.

Situation A

Level of responsibility	*Degree of skill and knowledge*		
	Degree A	*Degree B*	*Degree C*
Level 1	5	6	7
Level 2	6	7	8
Level 3	7	8	9

Situation B

Level of responsibility	*Degree of skill and knowledge*		
	Degree A	*Degree B*	*Degree C*
Level 1	8	9	10
Level 2	9	10	11
Level 3	10	11	12

Situation C

Level of responsibility	*Degree of skill and knowledge*		
	Degree A	*Degree B*	*Degree C*
Level 1	11	12	13
Level 2	12	13	14
Level 3	13	14	15

Part II. Examples of Job Descriptions

Example Job Description No. 1

Custodial Work Inspector
WG–3566–5

Duties

Inspects janitorial and custodial work performed by others to determine if it is performed according to established quality requirements.

Skill and Knowledge

Inspects buildings and areas such as offices, conference and classrooms, dispensary and first aid rooms, canteens, hallways, and storage areas after cleaning workers have finished for quality and quantity of work performed.

Insures that floors and halls are washed, waxed, and polished; that file cabinets, tables, counters, window sills, radiators, light fixtures, and fans are dusted; that rest rooms are supplied with soap, paper towels, toilet tissue, and deodorizers; that lavatories, urinals, and toilet bowls are scoured; that waste and butt cans are emptied; that drinking fountains are cleaned; and that glass partitions, windows, and mirrors are washe..

Certain work situations may require observing contractor employees to assure proper appearance and conduct, or may require surveillance over issue and use of Government-furnished supplies, insuring that proper amounts are drawn and used for the purpose intended. Follows up on supply material requests to assure the availability of supplies, and to avoid work stoppage or reduction in services rendered.

Instructs on safety regulations or any specific requirements to workers cleaning laboratories, in and about electrical, electronic, and chemical material and equipment; and maintains surveillance over the janitorial force performing work in classified areas. Observes to insure that property, papers, and equipment are not tampered with, displaced, or pilfered.

Observes for discrepancies, unsatisfactory conditions, substandard work, and noncompliance with instructions in carrying out custodial and janitorial services.

Maintains a daily log or checksheet on all factors pertinent to the various services performed which indicates work accomplished, and notes deficiencies; logs in shortages of supplies, materials and equipment; number of people on job; manner of employees' performance; complaints received and action taken; and safety and security violations. Signs checksheets and designates the quality of the work performed. Prepares reports with personal comments and recommendations and submits to supervisor for action.

Handles complaints reported by building occupants, and discusses legitimate complaints with supervisor and/or contractor's foreman to assure corrective action.

Responsibility

Instructions and guidelines are available, appropriate, and clearly applicable. A supervisor provides instructions covering the purpose of the inspection requirements, problems that can be anticipated, and the specific areas in which decisions can be made. The supervisor spot checks completed work to assure that the objectives have been met and that the results are consistent with instructions.

Physical Effort

Work at this level involves considerable walking, standing, stooping, and bending. Infrequently, he may climb ladders and scaffoldings in carrying out the inspection duties.

Working Conditions

Most of the work is done inside and there is a possibility of coming in contact with strong cleaning agents.

Factor Selection:

Situation—A
Responsibility—Level 1
Skill and Knowledge—Degree A
Grade Level—5

Example Job Description No. 2

Preservation Work Inspector

WG–7053–7

Duties

Inspects aircraft for preservation material applied by other workers to determine the adequacy of protection against corrosion and deterioration in storage.

Skill and Knowledge

Inspects aircraft designated for extended storage to insure that aircraft have been properly processed. Insures that bomb bay tanks, batteries, head sets, microphones, extension cords, confidential and secret equipment, photographic and bomb sight equipment, armament turret compressors, and loose equipment have been removed. Checks for the installation of static ground cable, warning tag on propeller, special plugs to seal cylinders, engine covers, engine nacelle plugs, carburetor air-scoop plugs, landing gear down lock, external control locks, and locks on air-operated bomb bay doors. Checks to insure that bomb bay tanks and fuel lines leading from closed fuel valves have been drained. Inspects for required sealing of fuel lines, exhaust system, external magneto openings, carburetor intakes, engine openings, and installation of Pitot tube covers. Inspects storage treating of fuel pumps, carburetors, fuel injection pumps, oxygen systems, hydraulic systems, and the like.

Inspects the storage processing of airframes, accessories, components, and associated equipment for extended storage. Observes work accomplished in spraying or brushing preservative compounds on metal surfaces, and internal and external parts. Checks for presence of desiccant bags. Inspects the draining and flushing of fuel, oil, and hydraulic systems. Inspects the taping and sealing of openings and the spraying of cocoon covers on airframe surfaces.

Observes the processing of aircraft engines for storage. Inspects the spraying of cylinder walls, gear cases, and valve ports. Checks the installation of protection plugs in spark plug and other threaded openings in the engine. Assures that bags of desiccant have been inserted through other openings.

Inspects aircraft while in storage. Checks condition of covers and seals. Enters in workbook storage treatment work to be accom-

plished. Checks for blisters, leaks, and cracks in tape or sealing compound. Observes humidity indicators for indication of excessive humidity. Maintains surveillance over general condition of storage area, stored aircraft, storage processing equipment, and storerooms. Insures proper control of grass and weeds, adherence to fire prevention regulations, compliance with periodic inspection requirements, and proper care of storage treating equipment. Brings deficiencies to attention of responsible personnel or notifies superior. Advises on the application of technical orders and changes, storage procedures, and work order requirements.

Responsibility

The supervisor provides general instructions concerning the broad objectives of the inspection assignment and the expected results, deadline requirements, reporting format, and other administrative matters. The employee receives little or no technical assistance during the course of the assignment and makes determinations that are adequately described in available guideline material. Instructions and guidelines are available but complicated, require careful interpretation, and may involve modification in applying to specific work assignments. Review of completed work is concentrated on general adequacy and conformance with desired objectives.

Physical Effort

The Inspector performs his work on hard surfaces and in areas that require him to stand, stoop, bend, and work in tiring and uncomfortable positions. He frequently lifts and carries parts, equipment, and packed containers that weigh up to 40 pounds.

Working Conditions

The work generally is done inside in areas that are well-lighted, heated, and ventilated. The Inspector may occasionally work outside or in areas that are drafty, hot, and poorly lighted. The work is sometimes dusty, dirty, and greasy. He is frequently exposed to the possibility of cuts, scrapes, and bruises.

Factor Selection

Situation—A
Responsibility—Level 2
Skill and Knowledge—Degree B
Grade Level—7

Example Job Description No. 3

Bearing Reclamation Work Inspector

WG–8455–8

Duties

Inspects bearing reclamation work performed by others to verify that the bearing rework and processing work is accomplished according to established quality requirements.

Skill and Knowledge

Maintains surveillance and control of the quality of completed bearings by rechecking and verifying the condition of bearing at the completion of various stages of processing. Selects bearings and processes for inspection according to established inspection instructions, sampling plans, or according to the requirements of the problem or situation under investigation or requiring control. Records, reports, maintains statistical control charts, and analyzes factual information obtained from normal visual, microscopic, tactile, and audio inspections or from utilizing dimensional measuring instruments and specialized test equipment and machines. Insures that gages, machines, and equipment used in bearing processing receive periodic testing and calibration for accuracy. Investigates problems or conditions associated with quality of bearings and refers recommendations for correction of deficiencies in quality to production supervisor through established channels. Checks completed work of bearing reclaimers to insure that the type of work accomplished was applicable to the specific type and use of the bearings processed. Performs inspections at any stage of processing essential to the control of the quality of bearings and processes.

Verifies the qualitative characteristics of processed bearings by examining them for corrosion, overheating, overloading, presence of foreign material, or excessive wear. Distinguishes discoloration due to overheating from that resulting from lubrication stains. Checks for microscopic evidences of roughness or defects in balls, rollers, races, retainers, and other critical parts. Measures parts for uniformity of dimensional tolerances, looseness, parallelism of sides, radial or axial play, torque, or other characteristics using gages or special equipment such as smooth rotors, quiet spindles, comparators, axial and radial play gages, dial indicators, precision bore gages, angular contact and flushness testers, microscopes,

electrolimit gages, precision air gages, noise and torque testing machines, rockwell hardness tester, electronic ball sorters, or other equipment. Inspects lubricating, packing, and canning methods for compliance with technical instructions.

Responsibility

The supervisor provides general instructions concerning the broad objectives and expected results of the assignment, deadline requirements, reporting format and similar matters. Instructions and guidelines are usually available but are complicated, require careful interpretation and require judgments to modify when applying to specific work assignments.

Review of completed work is for adequacy of inspection results in conformance with overall objectives. The employee receives little technical assistance during the course of the assignment and makes determinations within the framework of available inspection guideline material.

Physical Effort

The bearing reclamation inspector works while sitting, walking, and standing. He lifts materials typically weighing 10 to 20 pounds; however, occasionally lifts heavier quantities of 40 pounds or more. The job requires good vision, hearing, and muscular coordination.

Working Conditions

Generally, the work is done inside where the inspector is exposed to chemical cleaning fumes, solvents, and lubricants.

Factor Selection

Situation—A

Responsibility—Level 2

Skill and Knowledge—Degree C

Grade Level—8

Example Job Description No. 4

Heavy Equipment Repair Inspector

WG–5803–10

Duties

Performs inspection of repair work on a variety of small diesel engines and diesel engine components and accessories.

Skill and Knowledge

Uses inspector skills to perform dimensional, operational, and processing inspections at designated stages during the manufacture, overhaul, repair, assembly, and testing of various small, 4-, 6-, and 8-cylinder diesel engines and their components, such as cylinders, pistons, piston rings, connecting rods, cylinder liners, bearings, valves, rocker arm assemblies, camshafts, crankshafts, pumps, drive gears, fuel injection parts, lubricating system parts, gages, and instruments.

Uses ability to inspect complete engine assemblies and make or observe test operation of completed engines and the ability to inspect equipment driven by diesel engines, such as boat propulsion shafts and propellers, liquid fuel or water pumps, generators, hoists, air compressors, and similar machinery.

Uses a knowledge of castings, forgings, machined parts, and weldments used for fabrication of diesel engines and the ability to inspect for dimensional accuracy, hardness, and concentricity and alinement of parts. Knows how to use precision measuring instruments and tools, such as micrometers, balancing equipment, torque wrenches, permeability indicators, internal surface projectors, and borescopes.

Ability to make acceptance and rejection decisions.

When inspecting work performed by private contractors, uses a knowledge of specifications and job requirements as outlined in technical manuals and in pertinent sections of the contract.

Responsibility

Receives general supervision from a foreman, consisting of work assignments, new or revised procedures or specifications, technical advice and guidance on controversial cases regarding condition of equipment and spot check of work during progress and/or com-

pletion for technical accuracy and compliance with inspection procedures.

Physical Effort

The Inspector frequently works while the equipment is overhead, and where the parts worked on are in hard-to-reach places. This requires standing, stooping, bending, stretching, and working in tiring and uncomfortable positions. The Inspector frequently lifts parts and equipment that weigh up to 20 pounds. Occasionally, he may lift and carry items that weigh about 50 pounds.

Working Conditions

Most of the work is done inside where it is drafty and noisy, and fumes from vehicles are usually present. The Inspector must frequently stand on hard surfaces for long periods of time. There are times when he must crawl under vehicles and inspect while on hard, usually damp surfaces. He is occasionally called upon to work outside, sometimes in bad weather. Dirt, dust, and grease are frequently present. Vehicle fluids, such as battery acids and hydraulic fluids, may cause burns or irritate the skin. There is frequent exposure to the possibility of cuts, bruises, shocks, burns, and strains.

Factor Selection

Situation—B

Responsibility—Level 2

Skill and Knowledge—Degree B

Grade Level—10

Example Job Description No. 5

Painting Inspector

WG–4102–10

Duties

Inspects painting, lettering, preservation, doping, anodizing, and other surface finishing performed by other workers of aircraft or aircraft parts.

Skill and Knowledge

Inspects anodizing, painting, preserving, and doping of detail parts and assemblies for aircraft. Inspects the various finishes on electronic and ordnance devices and various instruments. Inspects photoengraving and silk-screening of nameplaces, quadrants, instrument dials, and similar items. Tests various finishes for surface oxidation, electrical conductivity, fluorescence, and similar properties.

Performs inspections during processing, subassembly, and final assembly.

Inspects for conformance to drawings, specifications, and engineering orders, and for general high quality workmanship.

Tests anodized parts with dye and continuity meter. Checks acid solutions in anodic tanks with hydrometer for specific gravity; and checks anodic tank instruments for proper amperage, voltage, and temperature.

Refers to manuals, blueprints, specifications, engineering orders, schedule briefs, technical orders, and bulletins.

Responsibility

Receives general supervision from a foreman consisting of work assignments, new or revised procedures or specifications, technical advice and guidance on controversial cases regarding condition of equipment and spot check of work during progress and/or completion for technical accuracy and compliance with inspection procedures.

Physical Effort

The Inspector performs his work on hard surfaces and in areas that require him to stand, stoop, bend, and work in tiring and

uncomfortable positions. He frequently lifts and carries parts, equipment, and packed containers that weigh up to 40 pounds.

Working Conditions

The work generally is done inside in areas that are well lighted, heated, and ventilated. The inspector may occasionally work outside or in areas that are drafty, hot, and poorly lighted. The work is sometimes dusty, dirty, and greasy. He is frequently exposed to the possibility of cuts, scrapes, and bruises.

Factor Selection

Situation—B

Responsibility—Level 2

Skill and Knowledge—Degree B

Grade Level—10

Example Job Description No. 6

Small Arms Repair Inspector

WG–6610–10

Duties

Inspects repair work of small-bore weapons and related parts.

Skill and Knowledge

Inspects repair work on a variety of weapons such as rifles, recoiless rifles (57mm, 75mm, and 105mm), carbines, pistols, machineguns, submachineguns, shotguns, rocket launchers, flame throwers, mortars, and various accessories and related items, such as bipods, tripods, traversing and elevating mechanisms, ball mounts, and various adaptors. Inspects bores for bulges, pits, or other defects. Inspects chambers for pits, gouges, and powder fouling. Inspects sights, trigger mechanisms, recoil and automatic firing mechanisms, breech mechanisms, machinegun cooling jackets, mounts, elevating and traversing mechanisms, and various other weapon parts, units, and assemblies.

Uses borescopes and various prescribed gages. Inspects for general condition, proper operation, good workmanship, specified measurements and tolerances, and conformance with specifications.

Responsibility

Receives general supervision from a foreman or other higher grade employees, consisting of work assignments, new or revised procedures or specifications, technical advice and guidance on controversial cases regarding condition of equipment and spot check of work during progress and/or completion for technical accuracy and compliance with inspection procedures.

Physical Effort

The inspector performs his work on hard surfaces and in areas that require him to stand, stoop, bend, and work in tiring and uncomfortable positions. He frequently lifts and carries parts, equipment, and packed containers that weigh up to 40 pounds.

Working Conditions

The work is generally done inside in areas that are well lighted, heated, and ventilated. The inspector may occasionally work out-

side or in areas that are drafty, hot, and poorly lighted. The work is sometimes dusty, dirty, and greasy. He is frequently exposed to the possibility of cuts, scrapes, and bruises.

Factor Selection

Situation—B

Responsibility—Level 2

Skill and Knowledge—Degree B

Grade Level—10

Example Job Description No. 7

Automotive Equipment Repair Inspector

WG–5823–11

Duties

Performs inspections on automotive repair work done by others on a variety of vehicles such as sedans, station wagons, buses, light and heavy duty trucks, tractor trailers, and ambulances.

Skill and Knowledge

Makes examination of vehicle and its components while in operation as well as while in a standby condition. Road-tests brakes, steering mechanisms, engine performance, clutch, gear shifting, panel instruments, and gages. Makes further inspection checks by performing various operation tests using compression, vacuum, leak meter and wheel adjusting gages, brake testing equipment, timing light, tachometer, hydrometer, etc., to check overall engine performance, prescribed tolerances and safety factors. Reviews maintenance sheets checked by mechanics during course of repairs to insure that all required items have been covered; checks work orders to make certain all necessary repairs prescribed have been accomplished, and that initials of mechanics and foremen appear on maintenance worksheets and time tickets. After completion of final inspection, signs inspection reports certifying that vehicle is in satisfactory operating condition, or rejects the vehicle and returns same to repair shop along with specific reports prescribing additional repair which is required to bring vehicle up to a satisfactory operating condition. Also inspects repair work in progress to assure that equipment is being repaired in accordance with pertinent requirements.

Responsibility

Independently performs the assignment after priorities and pertinent policy matters have been given. The employee makes determinations that are described in available, though complicated, guideline material. Modifications and their application to specific work assignments are referred to the supervisor.

Physical Effort

The Inspector frequently works while the equipment is overhead, and where the parts worked on are in hard-to-reach places. This

requires him to stand, stoop, bend, stretch, and work in tiring and uncomfortable positions. He frequently lifts heavy parts and equipment.

Working Conditions

Most of the work is done inside where it is drafty and noisy, and fumes from vehicles are usually present. The inspector must stand on hard surfaces for long periods of time. There are times when he must crawl under vehicles and inspect while on hard, usually damp surfaces. He is occasionally called upon to work outside, sometimes in bad weather. Dirt, dust, and grease are frequently present. Vehicle fluids, such as battery acids and hydraulic fluids, cause burns or irritate the skin. There is frequent exposure to the possibility of cuts, bruises, shocks, burns, and strains.

Factor Selection

Situation—B

Responsibility—Level 2

Skill and Knowledge—Degree C

Grade Level—11

Example Job Description No. 8

Sheet Metal Repair Inspector (Aircraft)

WG–3806–11

Job Summary

Performs and witnesses inspections and tests on a variety of fabricated and repair work performed by others on structural and nonstructural airframe components, equipment, and completed airframes.

Skill and Knowledge

Performs visual, dimensional, and operational inspections, progressively, at designated stages during the fabrication, repair, overhaul, and test of parts and structures, such as formers, stringers, bulkheads, fittings, engine mounts, brackets, cowling, fairing, enclosures, fuselages, floats, hulls, wings control surfaces, empennage, fuel and oil tanks, oil and air coolers, templates, welded structures, cables, and tubing.

Inspects for dimensional control, tolerances, wear, corrosion, structural or surface defects, alinement, workmanship, correct assembly, security, and compilance with blueprints, specifications, and other instructions.

Performs or witnesses operational, functional, pressure, or load test on coolers, regulators, tanks, floats, hulls, cables, arresting hooks, and similar equipment.
Uses magnetic and nonmagnetic inspection equipment, precision measuring instruments and tools such as scales, micrometers, gages, regulators, manometers, torque wrenches, jigs, hardness testers, protractors, and tensiometers.

Maintains records and prepares pertinent reports on work performed.

Responsibility

Receives general supervision from foreman, consisting of work assignments, new or revised procedures or specifications, technical advice and guidance on controversial cases regarding condition of equipment, and spot check of work during progress and/or completion for technical accuracy and compliance with inspection procedures.

Physical Effort

The Inspector performs his work on hard surfaces and in areas that require him to stand, stoop, bend, and work in tiring and uncomfortable positions. He frequently lifts and carries parts, equipment, and packed containers that weigh up to 40 pounds.

Working Conditions

The work is generally done inside in areas that are well lighted, heated, and ventilated. The Inspector may occasionally work outside or in areas that are drafty, hot, and poorly lighted. The work is sometimes dusty, dirty, and greasy. He is frequently exposed to the possibility of cuts, scrapes, and bruises.

Factor Selection

Situation—B

Responsibility—Level 2

Skill and Knowledge—Degree C

Grade Level—11

JOB GRADING SYSTEM

Example Job Description No. 9

Piping Systems Repair Inspector

WG–4204–13

Duties

Performs inspections and prepares inspection reports and test deficiency reports for work specifications division, design, and production department. Makes design conformance surveys and reports on postrepair for noise reduction installations; resiliently mounted machinery, motors and system equipment. Inspects work in progress on critical and noncritical piping systems to determine adequacy of workmanship, materials, and maintenance of subsafe continuity on nuclear powered submarines. Makes final inspection of completed systems, components, equipment, and witnesses/certifies and documents operational or other tests. Maintains documentation records. Receives, reviews, approves, and processes ripout and reentry request for work to insure the integrity of the ship, subsafe continuity, and safe work environment aboard nuclear submarines. Maintains reentry control for subsafe components worked inside shops. Makes inspections of piping systems on submarines and surface ships and of system components in shop repair or manufacture.

Skill and Knowledge

The Inspector must have a thorough technical knowledge of the pipefitting trade; and understanding of mechanical theory and mechanical work processes for manufacture, repair, installation, and operation of piping systems and equipment, and of the interface systems of hull structure, mechanical, and electrical. He has the ability to read and interpret, correctly, written technical material such as: instructions, job orders, specifications, procedures, sketches, drawings, and blueprints and the ability to determine overall inspection needs, quality checkpoints, and to prepare procedures or checklists for quality control. He uses a keen insight to make early determination of nonconforming or problem areas and communicates these observations to quality assurance supervision, production supervision, or others as required for effective resolution and quality control. He needs the ability to communicate both orally and in writing, and to prepare specific and precise memoranda or other written communications. He must be flexible and be able to quality inspect in other draft areas, by inspecting struc-

tural, mechanical, or electrical systems when required. He uses diverse knowledges and skills to use mechanical, electrical, and electronic gaging and measuring instruments. He must know mathematics sufficiently for onsite calculations to determine acceptability.

Responsibility

The supervisor provides general instructions which concern the broad objectives and expected results of the assignment, deadline requirements, reporting formats and other similar administrative matters. The employee receives little or no technical assistance during the course of the assignment. Review of completed work is concentrated on adequacy and conformance with desired objectives. The Inspector makes determinations that generally are described adequately in available guideline material. Instructions and guides are usually available but are complicated, require careful interpretation, and may involve modification in their applications to specific work assignments.

Physical Effort

The work involves prolonged periods of walking, standing, and climbing in ships, submarines, and manufacturing and repair shops. Tools and equipment used to perform inspections seldom weigh over 40 pounds.

Working Conditions

Inspectors are required to work inside or outdoors in all types of weather conditions, and are required to rotate on night shift assignments. Must work around rotating or operating equipment, sometimes in an area of electrical shock hazard. Must work in areas of poor footing and open spaces, drydocks, masts, open hatches, etc., and be alert to avoid missteps or falls.

Factor Selection

Situation—C

Responsibility—Level 2

Skill and Knowledge—Degree B

Grade Level—13

Example Job Description No. 10

Electronics Integrated Systems Repair Inspector

WG–2650–14

Duties

Inspects, and performs and witnesses tests on, electronic equipment, devices, components, and systems installed aboard naval vessels to determine compliance with specifications, plans, orders, directives, and sound shop and marine practices. Conducts inspections and tests within shops and on systems installed aboard naval vessels of all types.

Skill and Knowledge

Makes inspections during the removal, repair, alteration, overhaul, installation, and alinement of ground, shipboard, or airborne electronic systems. Inspects and tests entire electronic installation of various types of radio, radar, sonar, and integrated fire control navigation, and electronics countermeasures systems. Performs and witnesses tests on all electronic equipment and systems, making tests of both individual components' sensitivity and alinement and entire systems' overall performance. Uses various types of electrical and electronic meters and test equipment, such as signal generators, oscillators, oscilloscopes, vacuum tube voltmeters, ohmmeters, meggers, frequency recorders, frequency amplifiers, and potentiometers.

May inspect control system equipment for nuclear reactors.

When required to inspect work performed by private contractors, interprets specifications and job requirements to insure that contractor personnel understand the job to be done. Makes estimates of degree of completion of work so that the contract administrator has a basis for payments to contractor.

Responsibility

After a brief outline of priorities, work sequences, and pertinent policy matters has been given, the employee independently performs the assignment. Completed work is reviewed for adherence to inspection policy and to assure that broad program objectives have been achieved. The employee makes decisions on a wide range of matters that may involve deviations or departures from past precedents and accepted practices or highly subjective judgments.

Instructions and guides, when available, generally are not directly applicable.

Physical Effort

Standing, stooping, and bending are involved in carrying out work. Also involved are tiring movements such as stretching and lifting. When working in close areas, uncomfortable positions are sometimes necessary. Tools, parts, components, and meters that weigh up to 10 pounds are frequently lifted. On occasion, some items weighing up to 40 pounds are removed, lifted, and installed.

Working Conditions

Work is done inside well lighted, heated, and ventilated areas. Work outside is normally done in good weather; however, emergency situations sometimes require working outside in bad weather. There is a possibility of cuts, scrapes, and bruises while working with wire, power tools, and electronic parts. Broken bones may result from falls when working on large units. There is also a possibility of electrical shocks and burns when testing electrical lines and circuitry.

Factor Selection

Situation—C

Responsibility—Level 3

Skill and Knowledge—Degree B

Grade Level—14

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